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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/014,267      | 10/22/2001  | Gunter A. Kohler     | 52314US016          | 5099             |

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EXAMINER

CROWELL, ANNA M

ART UNIT PAPER NUMBER

1763

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/014,267 | <b>Applicant(s)</b><br>KOHLER ET AL. <span style="float: right;">20</span> |  |
|                              | <b>Examiner</b><br>Michelle Crowell  | <b>Art Unit</b><br>1763  |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 41-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Fig 1+3 of Kohler</u>                  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 41-45, 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohler et al. (U.S. 5,464,667) in view of Yializis (U.S. 4,954,371).

Referring to Figures 1, 2, and 4, column 4, lines 25-44, column 7, lines 36-46, column 8, lines 25-28, lines 45-51, and column 9, lines 22-32, and column 19, lines 65-67, Kohler discloses a jet plasma apparatus comprising a hollow cathode slot system 40 (col. 9, lines 22-30) and an adjustable anode system 60 (col. 10, lines 35-41). The hollow cathode slot system 40 includes three compartments in series: a first compartment 41, a second compartment 42, and a third compartment 43 (col. 7, lines 16-19). The first compartment 41 has a hollow cathode tube 46 (point source) (col. 7, lines 36-42) wherein plasma stream is formed from a first source 22, the second compartment 42 is a mixing chamber connected to both the first and third compartment (col.8, lines 1-3), and the third compartment 43 has two parallel electrode plates 55 and 56 (col.8, lines 45-47). In the second compartment, plasma is mixed with a feed gas prior to contacting the substrate (col. 7, lines 64-66). The feed gas inlet 49 is in another stream from a second source 20 and is positioned relative to the cathode system 40. Additionally, the hollow cathode tube (point source) 46 has a leading edge, and the tube is positioned inside the

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cylindrical walls 44. Furthermore, a substrate 75 contacts a radio frequency bias electrode 70 during the deposition process.

Kohler fails to teach an oil delivery system for providing a vaporized organic material.

Referring to Figures 5 and 6 and column 5, lines 3-10, 36-48, col. 8, lines 67 – col. 9, lines 10, and column 11, lines 29-36, Yializis teaches an apparatus for coating a substrate using an oil delivery system 110, 261. The oil delivery system includes an atomizer 115 for forming droplets, a vaporization chamber 116, and a nozzle structure 118 for delivering the organic material vapor to the chamber 123. Various materials are selected for the oil delivery system such as natural oils or silicone. By using a vaporized organic precursor in the apparatus, an organic material layer is deposited on the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to art to provide an oil delivery system as taught by Yializis as the feed gas source in Kohler in order to form an organic material layer on a substrate.

3. Claims 46 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohler et al. (U.S. 5,464,667) in view of Yializis (U.S. 4,954,371) and Cann et al. (U.S. 5,342,660).

The teachings of Kohler in view of Yializis are disclosed above.

Kohler in view of Yializis fails to teach a magnet.

Referring to Figure 1 and column 3, lines 31-35, Cann teaches magnets 217 surrounding the plasma jet apparatus 215. The magnets are used to accelerate and focus the plasma towards the deposition region. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to surround the point source's tube of Kohler in view of Yializis with a

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magnet as taught by Cann in order for the plasma to be accelerated and focused towards the substrate.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 41-44 and 47-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15, 16, 18, and 19 of U.S. Patent No. 5,464,667 in view of Yializis (U.S. 4,954,371).

Claims 41-44 and 47-48 of the present application differ from claims 15, 16, 18, and 19 by adding the limitation of an oil delivery system.

Although the present Kohler adds the limitation of an oil delivery system to the jet plasma apparatus, it is obvious over Yializis.

Yializis teaches an apparatus for coating a substrate using an oil delivery system 110, 261. The oil delivery system includes an atomizer 115 for forming droplets, a vaporization chamber 116, and a nozzle structure 118 for delivering the organic material vapor to the chamber

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123. Various materials are selected for the oil delivery system such as natural oils or silicone. By using a vaporized organic precursor in the apparatus, an organic material layer is deposited on the substrate.

It is the Examiner's position that it would have been obvious to one of ordinary skill in the art to provide an oil delivery system as taught by Yializis as the feed gas source in Kohler in order to form an organic material layer on a substrate.

### ***Response to Arguments***

6. Applicant's arguments filed December 30, 2003 have been fully considered but they are not persuasive.

Applicant has argued that the proposed modification of Kohler et al in view of Yializis would directly contravene Yializis' own requirements and would allow Yializis' vaporized monomer stream to interact with Kohler et al.'s plasma along the entire plasma path length. However, the vaporized monomer stream only interacts with Kohler et al.'s plasma in a portion of the plasma length, particularly during the 2<sup>nd</sup> compartment. In addition, the claims do not preclude the interaction of the vaporized monomer stream with the plasma along the plasma path length.

Applicant has argued that Yializis stresses that only a monomeric film should be deposited. However, the background of Yializis teaches monomeric film, but Yializis teaches providing a polymeric coating (col. 4, lines 33-38). Additionally, the teachings of Yializis were simply applied to demonstrate a vaporized organic material. Applicant cannot show

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nonobviousness by attacking references individually where the rejections are based on combinations of references. Furthermore, the type of film formed holds no patentable weight when it applies to apparatus claims since expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claims.

Applicant has argued that the office action does not provide a proper motivation for combining Yializis and Kohler et al. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation is to form an organic material layer on a substrate.

Applicant has argued that even if the proposed modification were made, the resulting combination would not provide a plasma stream from a first source and an oil delivery system for providing vaporized organic material in another stream. However, as seen in Figures 1 and 2, Kohler et al. shows a plasma stream from a first source and feed gas from another stream and by combining with Yializis the feed gas would be modified to provide a vaporized organic material (see attached Fig. 1 and 2).

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Applicant has argued that the Office Action does not indicate where in Kohler et al., Yializis, or Cann et al. there is any proper motivation to position a tube as recited in claim 50. As seen in Figure 2, Kohler et al. teaches a hollow cathode system having a cylinder and a tube with a leading edge positioned inside of the cylinder. Cann et al. teaches magnets surrounding the outlet of a plasma jet apparatus. The motivation to provide the magnets to the outlet of the cylinder (col. 3, lines 31-35) is to accelerate and focus the plasma towards the deposition region.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (571) 272-1432. The examiner can normally be reached on M-F (8:00 - 4:30).



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMC *lme*  
03-19-04

  
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